## Amendments to the Claims

1. Device for continuous evaporation of a high temperature superconductor ~~(13)~~ onto a substrate ~~(7)~~ in a vacuum ~~(6)~~ comprising:

    a. a refilling device ~~(5)~~ with a stock of high temperature superconductor material ~~(13)~~;

    b. an evaporation device ~~(1)~~ which evaporates the high temperature superconductor material ~~(13)~~ in an evaporation zone by a beam ~~(2)~~ of an energy transferring medium;

    c. a conveyor ~~(3)~~ which transports the high temperature superconductor material ~~(13)~~ from the refilling device ~~(5)~~ to the evaporation zone in a way that

    d. the high temperature superconductor material ~~(13)~~ delivered to the evaporation zone is evaporated essentially without residues, ~~**characterized in that**~~ wherein

    e. the conveyor transports the high temperature superconductor material ~~(13)~~ to the evaporation zone as a granulate ~~(13)~~ with a grain size of ~~0.05 — 0.5 mm~~ greater than about 0.05 mm and less than about 0.5 mm.

2. Device according to claim 1, further comprising a means to scan the beam ~~(2)~~ of the evaporator ~~(1)~~ in at least one direction over the evaporation zone.

3. Device according to claim 2, wherein the means scans ~~are scanning~~ the beam ~~(2)~~ at a repetition frequency of greater than about 50 Hz ~~> 50 Hz,~~ and preferably at about 90 Hz.

4. Device according to ~~one of the~~ claims 1—~~3~~, further comprising a means to first pre–heat and then evaporate the high temperature superconductor material ~~(13)~~ delivered to the evaporation zone by the conveyor ~~(3)~~.

5. Device according to claim 4, where the evaporation device comprises at least two power levels ~~($P_1$,$P_2$)~~ for the beam ~~(2)~~, ~~preferably~~ with a narrow transition width ~~(Δx)~~ between the first and the second power level to achieve a linear gradient of the thickness profile ~~D(x)~~ of the delivered high temperature superconductor material ~~(13)~~.

6. Device according to claim 5, wherein the conveying speed of the conveyor ~~(3)~~ can be adjusted to satisfy at least one of the conditions ~~such~~ that the angle of the slope α is less than about 20°, ~~< 20°~~ and ~~/ or~~ the length of the evaporation zone is less than about 10 mm ~~< 10 mm~~.

7. Device according to one of the claims 5 or 6, wherein the beam ~~(2)~~ of the energy transferring medium can be focused in such a way that while scanning it reaches its minimum width when it is focused approximately ~~located essentially~~ at the upper edge of the slope.

8. Device according to ~~one of the~~ claims 1—~~7~~,wherein the conveyor ~~(3)~~ and ~~/ or~~ the substrate ~~(7)~~ can be tilted to compensate for an inclined directional pattern of the material evaporating from the conveyer ~~(3)~~.

9. Device according to ~~one of the~~ claims 1—~~8~~, wherein the evaporation device ~~(1)~~ comprises an electron beam evaporator which can be ~~preferably~~ modulated.

10. Device according to ~~one of the~~ claims 1—~~9~~, wherein the high temperature superconductor material ~~(13)~~ is conveyed into the evaporation zone in the shape of a line with a width of greater than about 3 mm and less than about 30 mm. ~~preferably between 3 and 30 mm.~~

11. Device according to ~~one of the~~ claims 1—~~10~~, wherein the conveyor transports the high temperature superconductor material ~~(13)~~ to the evaporation zone as a granulate ~~(13)~~ with a grain size of greater than about 0.1 mm and less than about 0.2 mm. ~~0.1—0.2 mm.~~

12. Device according to ~~one of the~~ claims 1~~—11~~, wherein the conveyor ~~(3)~~ can be cooled and comprises at least one of a rotating turntable, ~~and / or~~ a rotating drum, ~~and / or~~ a vibration conveyor, ~~and / or~~ a conveyor belt, ~~and / or~~ a screw conveyor, and a ~~or~~ slide.

13. Device according to ~~one of the~~ claims 1~~—12~~, wherein the refilling device is designed as a funnel ~~(5)~~ and ~~/ or~~ can be heated.

14. Device according to ~~one of the~~ claims 1~~—13~~, wherein the refilling device ~~(5)~~ has a separate pumping device ~~(12)~~.

15. Device according to claim 14, wherein the refilling device ~~(5)~~ is designed as a funnel ~~(5)~~ which can be heated in a ~~the~~ bottom section, and the separate pumping device ~~(12)~~ is designed as a suction pipe ~~(12)~~ which protrudes into the bottom section of the funnel ~~(5)~~.

16. Device according to claim 1 ~~one of the previous claims~~, wherein the high temperature superconductor material ~~(13)~~ is a mixture of different compounds, so that upon evaporation on temporal average the desired composition of the high temperature superconductor material ~~(13)~~ is deposited.

17. Device according to claim 1 ~~one of the previous claims~~, further comprising a means ~~(9, 10) which enable~~ to supply a gas~~, preferably oxygen,~~ close to the substrate ~~(7)~~.

18. Device according to claim 1 ~~one of the previous claims~~, further comprising a means ~~(8)~~ to heat and ~~/ or to~~ move the substrate ~~(7)~~ relative to the evaporation zone.

19. Device according to claim 1 ~~one of the previous claims~~, further comprising a means to measure an ~~the~~ evaporation rate by atomic absorption spectroscopy.~~, preferably of a Cu line of the evaporating high temperature superconductor material.~~

20. Device according to claim 19, further comprising a means to partially shade the vapor of the high temperature superconductor material at the location of the measuring light beam to avoid saturation of the absorption line.

21. Device according to claim 1 ~~one of the previous claims~~, further comprising a second ~~at least another~~ refilling device having ~~with~~ source material for an auxiliary layer of the high temperature superconductor film.

22. Device according to claim 21, further comprising a means to connect said second ~~at least another~~ refilling device ~~and~~ to the first refilling device, and ~~(5)~~ for holding a stock of high temperature superconductor material ~~(13)~~ sequentially with the conveyor ~~(3)~~.

23. Method for evaporating a high temperature superconductor coating onto a substrate ~~(7)~~ in a vacuum ~~(6)~~ comprising the steps of:

   a. continuously conveying a granulate ~~(13)~~ of a high temperature superconductor material into a evaporation zone; and

   b. operating a beam ~~(2)~~ of an energy transferring medium, so that the delivered granulate ~~(13)~~ is evaporated essentially without residues within the evaporation zone, wherein ~~**characterized in that**~~

   c. the high temperature superconductor material ~~(13)~~ is conveyed to the evaporation zone as granulate ~~(13)~~ with a grain size of greater than about 0.05 mm and less than about 0.5mm. ~~0.05 – 0.5 mm.~~

24. Method according to claim 23, wherein the granulate ~~(13)~~ is delivered to the evaporation zone in the shape of a line ~~(4)~~.

25. Method according to claim 24, wherein the beam ~~(2)~~ of the energy transferring medium is guided over one end of the trace ~~(4)~~ so that the trace ~~(4)~~ is scanned

approximately ~~essentially~~ across its entire width, as well as ~~and~~ over a small section in the direction of the conveying motion.

26. Method according to ~~one of the~~ claims 23—~~25~~, wherein the high temperature superconductor is $RBa_2Cu_3O_7$, wherein R is either yttrium or an element having an atomic number between 57 and 71. ~~(R = yttrium, or an element with atomic number 57 to 71, or a mixture of these elements).~~

27. Method according to ~~one of the~~ claims 23—~~26~~, using a device comprising:

    a. a refilling device with a stock of high temperature superconductor material;

    b. an evaporation device which evaporates the high temperature superconductor material in an evaporation zone by a beam of an energy transferring medium;

    c. a conveyor which transports the high temperature superconductor material from the refilling device to the evaporation zone in a way that

    d. the high temperature superconductor material delivered to the evaporation zone is evaporated essentially without residues, wherein

    e. the conveyor transports the high temperature superconductor material to the evaporation zone as a granulate with a grain size of greater than about 0.05 mm and less than about 0.5 mm. ~~according to claims 1 – 22.~~

28. High temperature superconductor coating produced by a method according to claims 23—~~27~~.